



Customer Experience Towards Online Train Ticket Booking Services: An Empirical Study with Special Reference to The IRCTC App

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ABSTRACT :

Online platforms now handle most railway reservations in India, which makes the quality of the digital booking experience important for millions of passengers. This study examines customer experience with the IRCTC Rail Connect app across five dimensions: ease of use, app performance and reliability, payment and refund process, customer support and service quality, and overall experience. Primary data were collected from 206 IRCTC app users in Chennai through a structured five-point Likert-scale questionnaire, selected by convenience sampling. The data were analysed using percentage analysis, one-way ANOVA, simple linear regression and Pearson correlation. The results show that most respondents find the app easy to use (63.2%), consider payments secure (66.7%) and are satisfied overall (70.6% of valid responses). Age groups do not differ significantly in their perception of booking guidance ($p = 0.794$) or user-friendliness ($p = 0.950$). App performance during busy periods such as Tatkal booking significantly predicts intention to use the app again ($R^2 = 0.28$, $p < 0.001$), and timely refunds are strongly and positively correlated with overall satisfaction ($r = 0.690$, $p < 0.001$). However, half of the respondents (50.9%) are dissatisfied with peak-time performance and only 35.1% find it easy to contact customer support. The study suggests that IRCTC should prioritize peak-load stability, faster and more transparent refunds, and stronger grievance handling.

Keywords: customer experience, IRCTC, online train ticket booking, app performance, refund timeliness, customer satisfaction

Introduction

Digital technology has changed how customers access services, and railway ticketing is a clear example. Reservations that once required long queues at Passenger Reservation System counters can now be made from a smartphone at any time. In India, the Indian Railway Catering and Tourism Corporation (IRCTC), a public sector company under the Ministry of Railways, provides online ticketing through its website and the IRCTC Rail Connect app. The core reservation system behind these channels is developed and maintained by the Centre for Railway Information Systems (CRIS), while IRCTC manages the customer-facing experience, including payments and support.

The scale of this channel shows why its quality matters. In 2024–25, the IRCTC website and app together handled 86.38% of all reserved tickets on Indian Railways, with an average of 13.88 lakh tickets booked each day, and 5,065 lakh tickets were booked online that year compared with 4,530 lakhs in 2023–24. The Ministry of Railways reports that by March 2026, 88% of reserved tickets were booked online. At the same time, passengers continue to report problems such as slow performance during Tatkal hours and festival seasons, payment failures, refund delays and limited customer support. The launch of the Rail One app in July 2025 and the availability of authorized third-party booking apps also give passengers more choice, so understanding what users value in the IRCTC app is both timely and practical.

Customer experience refers to the perception and feeling that customers develop through their interactions with a service. For an app-based service, it is shaped by ease of use, speed, reliability, payment and refund handling, and the quality of support. This study examines how these dimensions relate to satisfaction and continued use of the IRCTC app.

Review of Literature

Several theories support the study. The Technology Acceptance Model (Davis, 1989) identifies perceived usefulness and perceived ease of use as the main drivers of technology adoption, and Christanto et al. (2024) confirmed that ease of use positively influences usefulness, attitude and intention to use for the KAI Access train app in Indonesia. Bhattacharjee (2001) showed that satisfaction and perceived usefulness determine whether users continue using an information system, which supports examining future-use intention. Parasuraman, Zeithaml and Malhotra (2005) proposed efficiency, system availability, fulfilment and privacy as the dimensions of electronic service quality, a framework that fits the study's focus on performance, payment

security and refunds. Chakraborty, Gunasekaran and Appio (2026) analysed the IRCTC app through affordance theory and found that visibility, interactivity and persistence improved user experience, service quality perception and brand loyalty.

Empirical studies point in a similar direction. Ameenudheen and Gafoor (2021) found the largest gaps between expectation and perception for IRCTC in tangibility and responsiveness. Ferdous et al. (2021) found that system, information and service quality all positively influenced satisfaction with Bangladesh Railway's e-ticketing, with service quality the strongest. Dewi et al. (2023) reported that e-trust is a prerequisite for satisfaction with KAI Access. Castanha et al. (2022) found that habit, hedonic motivation, performance expectancy and perceived trust predict intention to adopt the IRCTC app among Goan consumers. Anitha and Kamakshi (2025) reported that error-free, consistent app performance and the Ask DISHA chatbot were associated with satisfaction among IRCTC users. Soni (2011), analysing online reviews, identified ticket availability during Tatkal booking, website failures, delayed refunds and transaction failures as recurring problems.

Research gap. Most earlier studies examine IRCTC's website or general service quality, cover only one or two aspects such as ease of use or payment security, and describe satisfaction broadly without testing how specific features influence outcomes such as future usage intention. Peak-period performance, refund efficiency and the effectiveness of customer support receive limited empirical attention, and age-based differences in perceived ease of use are rarely tested. This study addresses these gaps by examining ease of use, performance, payment and refund handling and support together, and by testing the relationships statistically.

Objectives and Hypotheses

The primary objective is to study customer experience towards online train ticket booking services with special reference to the IRCTC app. The secondary objectives are:

1. To examine how easy and convenient the app is to use for booking.
2. To check whether the app's performance and reliability affect future bookings.
3. To analyse the influence of refund handling on the overall experience.
4. To measure overall customer experience with the IRCTC app.

Three null hypotheses were tested:

- Ho1: There is no significant difference in the perceived ease of using the IRCTC app across age groups.
- Ho2: App performance during busy times does not significantly affect the intention to use the IRCTC app for future bookings.
- Ho3: There is no significant relationship between receiving refunds within a reasonable time and overall customer satisfaction.

Research Methodology

The study follows a descriptive research design. The population comprises customers who use the IRCTC app to book train tickets, including students, employees, business persons, professionals and homemakers. The sampling frame consists of app users residing in Chennai, reached through contacts, colleges, workplaces, residential areas and social media groups. Convenience sampling, a non-probability method, was used, and 206 valid responses were obtained.

Primary data were collected through a structured questionnaire circulated as a Google Form. It had a demographic section (age, gender, income), a usage section (frequency of use and type of ticket usually booked) and statements on ease of use, app performance and reliability, payment and refund process, customer support and service quality, and overall customer experience, each rated on a five-point Likert scale from strongly disagree to strongly agree. Secondary data came from journals, books, websites and earlier studies. The data were analysed using percentage analysis, one-way ANOVA, simple linear regression and Pearson correlation. In the percentage tables, "agree" combines the agree and strongly agree responses.

Results and Analysis

1.1. Respondent profile

Most respondents were aged 18–25 years (57.9%), followed by 26–35 years (26.3%), 36–45 years (12.3%) and above 45 years (3.5%). Women formed 64.9% of the sample and men 35.1%. Most respondents (57.9%) use the app rarely, 22.8% use it once or twice a month, 12.3% three to five times a month and 7.0% more than five times a month. General tickets are the most commonly booked type (50.9%), followed by Tatkal (21.1%), both General and Tatkal (21.1%) and Premium Tatkal (7.0%).

1.2. Perception of the app

Table 1 - Respondents who agreed or strongly agreed with each statement (n = 206)

Dimension	Statement	Agree (%)
Ease of use	The app is easy to use	63.2
	Booking a ticket is simple and easy	59.6
	Finding trains and checking seats is easy	56.1
	The app clearly guides me through booking	64.9

Dimension	Statement	Agree (%)
Performance and reliability	The app is user-friendly	57.9
	The app loads quickly	42.1
	The app rarely hangs or crashes	45.6
	The app works well during busy times	33.3
	I rarely face technical problems	52.6
Payment and refund	The app is available whenever I need it	50.9
	Payment is easy (n = 50 valid)	64.0
	Payment options are convenient	64.9
	My payments are secure	66.7
	I receive refunds within a reasonable time	57.9
Support and service quality	The refund process is clear	54.4
	It is easy to contact customer support	35.1
	My complaints are resolved properly	42.1
	The support team provides useful assistance	50.9
	The app provides useful self-service options	56.1
Overall experience	I am satisfied with customer support	49.1
	My overall experience is positive	63.2
	The app meets my expectations	56.1
	I would recommend the app to others	61.4
	I plan to use the app for future bookings	61.4
	Overall, I am satisfied (n = 51 valid)	70.6

The ease-of-use and payment items are the strongest areas, with payment security the highest rated of the service attributes. Performance items are weaker. Only 33.3% agreed that the app works well during busy times, while 50.9% disagreed or strongly disagreed. Ease of contacting customer support was the lowest rated item, with 31.6% neutral and 33.3% disagreeing.

1.3. One-way ANOVA: age and ease of use

One-way ANOVA tested whether perceptions of ease of use differ across the four age groups (H₀₁).

Table 2 - Anova Analysis

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.72	3	.57	.34	.794
Within Groups	88.53	53	1.67		
Total	90.25	56			

For “the app clearly guides me through the booking process”, $F = 0.34$ ($p = 0.794$), and for “overall, the IRCTC app is user-friendly”, $F = 0.12$ ($p = 0.950$). Both p -values exceed 0.05, so the null hypothesis is accepted. The mean scores (3.49 and 3.32) lie slightly above the neutral point. Respondents aged 26–35 rated booking guidance highest (3.73) and those above 45 lowest (3.00), but the difference is not statistically significant. The above-45 group has only two respondents, so this result should be read with caution.

1.4. Simple linear regression: peak-time performance and future use

Simple linear regression tested whether performance during busy times predicts intention to use the app for future bookings (H₀₂).

Table 3 - Regression Analysis

Source	Sum of squares	df	Mean square	F	Sig.
Regression	21.02	1	21.02	20.94	0.000
Residual	55.22	55	1.00		
Total	76.25	56			

The model gives $R = 0.53$ and $R^2 = 0.28$, so peak-time performance explains about 28% of the variation in future-use intention. The coefficient is 0.48 ($\beta = 0.53$, $t = 4.58$, $p < 0.001$), and the fitted equation is:

$$\text{Future use intention} = 2.19 + 0.48 \times (\text{App performance during busy times})$$

The null hypothesis is rejected: each one-unit improvement in perceived peak-time performance is associated with a 0.48-unit increase in intention to keep using the app.

1.5. Pearson correlation: refund timeliness and satisfaction

Table 4 - Correlation Analysis

Variables	Refunds within a reasonable time	Overall satisfaction with experience
Refunds within a reasonable time	1.000	0.690
Overall satisfaction with experience	0.690	1.000
Sig. (2-tailed)	0.000	
N	51	51

Pearson correlation between receiving refunds within a reasonable time and overall satisfaction (H_03) gave $r = 0.690$ ($p < 0.001$, $N = 51$), a strong, positive and significant relationship. The null hypothesis is rejected. Passengers who feel refunds are processed on time are more likely to be satisfied overall. Correlation shows association, not causation.

Discussion

The results show a service that is generally well regarded for what users see on screen, namely navigation, payment options and payment security, but is less convincing on what happens behind the screen under load. This pattern matches the industry profile: CRIS operates the reservation engine and IRCTC the front end, and passengers experience both together. A user may find the app easy to use and still be dissatisfied because it slows down at 10 a.m. on a Tatkal day.

The regression result links this weakness to behaviour. Peak-time performance is the only factor tested against future-use intention, and it explains over a quarter of the variation, which is substantial for a single predictor. This is consistent with Bhattacharjee's (2001) view that satisfaction and perceived usefulness drive continuance, and with the findings of Anitha and Kamakshi (2025) and Soni (2011) on consistent performance and Tatkal-time failures. The strong refund-satisfaction correlation agrees with Soni's (2011) observation that delayed refunds hurt the service experience, and it supports the e-service quality view that fulfilment matters as much as interface design (Parasuraman et al., 2005).

The absence of age differences suggests that the app's ease of use is perceived similarly across groups, which is encouraging for a service with a very diverse user base. Because the sample is young and older users are barely represented, this should be treated as indicative rather than conclusive.

Suggestions and Managerial Implications

- 1. Strengthen peak-hour performance.** Increase server capacity, load balancing and real-time monitoring for Tatkal windows and festival seasons, since peak-time performance significantly affects future use.
- 2. Speed up refunds and keep users informed.** Set clear refund timelines and provide real-time refund tracking and notifications, given the strong link between refund timeliness and satisfaction.
- 3. Improve user-friendliness.** Simplify navigation, reduce the number of steps in booking and payment, and fix recurring errors, as the user-friendliness score (mean 3.32) is only moderate.
- 4. Provide clearer guidance for new users.** Add step-by-step prompts, help tips and a short in-app tutorial.
- 5. Support all age groups.** Offer larger text, language options and simple help for older and less tech-savvy users.
- 6. Enhance customer support.** Offer faster assistance, simpler complaint procedures, complaint tracking and clear resolution timelines, especially for payment and refund problems.
- 7. Reduce booking interruptions.** Ensure quick recovery from crashes, session timeouts and payment failures so users do not lose their booking progress or money.

Limitations and Scope for Further Research

The sample of 206 respondents from Chennai, selected by convenience sampling, limits generalisation to all IRCTC app users. The sample is young (57.9% aged 18–25), predominantly female and mostly made up of rare users, and responses depend on perception and recall. Two items had missing responses (payment ease and overall satisfaction), so their percentages are based on valid responses. The app is also updated frequently, so findings may not hold after major changes. Future studies could use larger probability samples across several cities, include frequent and Tatkal-heavy users, and compare the IRCTC app with Rail One and authorised third-party apps using multivariate techniques such as multiple regression or structural equation modelling.

Conclusion

The study concludes that customers generally have a favourable view of the IRCTC app. Most respondents find booking simple and guided, consider payments secure and convenient, and are satisfied overall, and most would recommend the app and continue to use it. Perceptions of ease of use do not differ significantly by age. However, performance during peak booking hours is a major concern, and customer support and complaint resolution are the weakest areas. Peak-time performance significantly predicts intention to keep using the app, and timely refunds are strongly associated with satisfaction. IRCTC can therefore strengthen customer experience most by making the app stable under heavy demand, processing refunds quickly and transparently, and improving access to effective support.

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